## REMARKS

### Examiner Interview

Applicants acknowledge with appreciation the courtesy of a telephone interview extended to Applicants' attorney, Justin Liu, on June 29, 2005. During the interview, no exhibit was shown and no demonstration was conducted. Claim 1 was discussed. No agreement was reached with regard to Claim 1.

### Summary of Claim Status

Claims 1-25 are pending in the present application after entry of the present amendment. Claims 1–25 are rejected for the reasons discussed below. Applicants respectfully request favorable reconsideration of the claims and withdrawal of the pending rejections and objections in view of the present amendment and in light of the following discussion.

### Rejections Under 35 U.S.C. § 102

#### Khouja

Claims 1, 16, and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Khouja et al., U.S. Patent No. 6,345,379 ("Khouja"). Applicants respectfully traverse this rejection with respect to all claims.

Applicants have amended Claims 1 and 16 to recite that modifying the signal comprises modifying at least one of the group consisting of a source of the signal and a sink of the signal. The amendments are intended to more particularly point out and more distinctly claim the subject matter Applicants regard as the invention, and is fully supported by the specification as filed.

Applicants have also made minor amendments in Claims 1, 16, and 22 merely to clarify the language, and make explicit what was implicit in the original claim language. In particular, Applicants have made amendments to clarify that the high and low power ranges refer to high and low power probability ranges. Applicants have also

made similar amendments in Claims 3, 4, 11, and 23 to maintain consistency with the amendments in Claims 1 and 22. Such amendments do not relate to the prior art.

Applicants submit that Khouja, in fact, actually describes a method for estimating or computing power dissipated by a circuit. See, e.g., Khouja at Abstract. That is, Khouja merely discloses techniques for determining power dissipation that are faster than prior art techniques because simulation is performed at the gate level. See, e.g., Khouja at Summary, col. 7, lines 24-34. Importantly, nowhere in Khouja is any method for optimizing leakage power taught or even suggested, and Khouja does not describe modifying any signal as recited in Claim 1. None of the portions of Khouja cited by the Examiner appear to disclose or teach modifying any part of a signal, much less modifying a source or a sink of the signal. In fact, Khouja actually teaches away from modifying a signal, since modifying a signal would require additional processing time and lead to a less accurate estimate of power, both of which run counter to Khouja's stated objective.

In contrast, Claim 1 recites modifying a signal if static probability of the signal is in a high power probability range, wherein the modifying comprises modifying at least one of a source or a sink of the signal, such that static probability of the modified signal is in a low power probability range and functionality of the system is not affected. Since Khouja does not teach or even suggest any modification of any signals, much less the modification as recited in Claim 1, Applicants submit that Claim 1 is allowable over Khouja.

Claim 16 recites limitations similar to the limitations of Claim 1. In particular, Claim 16 recites modifying a signal if static probability of the signal is in a high power probability range, wherein the modifying comprises modifying at least one of a source or a sink of the signal, such that static probability of the modified signal is in a low power probability range and functionality of the system is not affected. As set forth above, Applicants submit that Khouja does not teach or even suggest such modification. Therefore, Applicants believe that Claim 16 is also allowable over Khouja.

Claim 22 recites selectively modifying a signal by a modifiable output of a signal source and a modifiable input of a signal sink. As set forth above, Applicants submit that Khouja does not teach or disclose any modification of a signal, much less modification of a signal source and a signal sink. Therefore, Applicants believe Claim 22 is allowable over Khouja.

Cohn

Claims 1, 16, and 25 are further rejected under 35 U.S.C. § 102(b) as being anticipated by Cohn et al., U.S. Patent No. 6,687,883 ("Cohn"). Applicants respectfully traverse this rejection with respect to all claims.

Applicants submit that Cohn does not teach or even suggest the features of Claim 1, as amended. In particular, nowhere does Cohn teach or even suggest a high power probability range and a low power probability range, as recited in Claim 1. Cohn, instead, merely describes calculating a static probability for a net, making changes in the circuit, and updating static probabilities in an iterative process. See, e.g., Cohn at Fig. 6. The changes described in Cohn, however, do not modify a signal, if the signal is in a high power probability range, such that the static probability of the modified signal is in a low power probability range. In fact, Cohn does not even mention, much less teach or disclose high and low power probability ranges.

Moreover, Claim 1 recites that the signal is modified such that functionality of the system is not affected. The techniques disclosed in Cohn, however, do affect functionality of the system, and thus Cohn actually teaches away from the invention recited in Claim 1. For example, Cohn suggests adding a gate to force a net or forcing a slave latch to a particular state in order to reduce leakage power. See, e.g., Cohn at col. 15, lines 28-32. This clearly affects functionality of the system as the same set of input vectors would produce very different outputs. That is, Cohn teaches inserting additional circuitry to artificially "force" an output to a particular value in order to reduce leakage power. For example, as shown in Figs. 4A-4C of Cohn, the original circuit 70 performs an AND function. Cohn then describes adding either an additional OR gate 72 (Fig. 4B) or an additional inverter 73 and input to AND gate 70 (Fig. 4C) in order to

force the output to a one or a zero. Thus, there is an additional input (ODC) is required for the system, and the system no longer performs the AND function of the original circuit, since the additional ODC signal is used to override the output and change the functionality of the circuit. Thus, functionality of the system is clearly affected by the techniques taught in Cohn.

Therefore, Applicants believe Claim 1 is allowable over Cohn.

Claim 16 recites limitations similar to the limitations of Claim 1. In particular, Claim 16 recites high and low power probability ranges, and modifying a signal, if static probability of the signal is in a high power probability range, such that static probability of the modified signal is in a low power probability range and functionality of the system is not affected. As set forth above, Applicants submit that Cohn does not teach or even suggest such features. Therefore, Applicants believe that Claim 16 is also allowable over Cohn.

Claim 22 recites selectively modifying a signal such that the signal has a static probability in a low power probability range, and such that functionality of the system is not affected. As set forth above with respect to Claim 1, Applicants submit that Cohn does not teach or suggest such features. Therefore, Applicants believe Claim 22 is allowable over Cohn.

Therefore, for at least the reasons set forth above, Applicants believe Claims 1, 16, and 22 are allowable over the cited references, and Applicants respectfully request allowance of Claims 1, 16, and 22,

Rejections Under 35 U.S.C. § 103

Claims 2-15, 17-21, and 23-25 are rejected under 35 U.S.C. § 103(a) as being obvious over Khouja. Applicants respectfully traverse the rejection with respect to all claims, and submit that Khouja does not teach or suggest the features of the claims. Claims 2-15, 17-21, and 23-25 are further rejected under 35 U.S.C. § 103(a) as being obvious over Cohn. Applicants respectfully traverse the rejection with respect to all claims, and submit that Cohn does not teach or suggest the features of the claims.

Furthermore, Claims 2-15 depend from Claim 1 and thus include all of the limitations of Claim 1; Claims 17-21 depend from Claim 16 and thus include all of the limitations of Claim 16; and Claims 23-25 depend from Claim 22 and thus include all of the limitations of Claim 22. Applicants believe Claims 1, 16, and 22 are allowable for at least the reasons set forth above. In addition, the dependent claims include further limitations beyond the scope of the teachings of Khouja and Cohn. Therefore, for at least these reasons, Applicants believe Claims 2-15, 17-21, and 23-25 are also allowable, and allowance of such claims is respectfully requested.

Claim Objections

Claims 3-4 are objected to because of certain informalities, the Examiner stating: "the claimed limitations in both claims are confused, since the range from 1 to 0.5 and 0.5 to 1 belonged to the same high power range." As noted above, Applicants have amended Claims 3 and 4 to correspond to the clarifying amendments made in Claim 1. In particular, Claim 3 recites that the high power probability range is a range from 0 to 0.5, and Claim 4 recites that the high power probability range is a range from 0.5 to 1. Therefore, Applicants believe the objections have been overcome, and respectfully request withdrawal of the objections.

## CONCLUSION

No new matter has been introduced by any of the above amendments. In light of the above amendments and remarks, Applicant believes that Claims 1-25 are in condition for allowance, and allowance of the application is therefore respectfully requested. If action other than allowance is contemplated by the Examiner, the Examiner is respectfully requested to telephone Applicants' attorney, Justin Liu, at 408-879-4641.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450, on July 1, 2005.

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Name

Signature